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STEWART L. UDALL, SECRETARY
Fish and Wildlife Service, Clarence F. Pautzke, Commissioner

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RED SEA FISHERY OFF MASSAWA, ETHIOPIA

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Summary

It is widely believed by interested parties that Ethiopia's fishing grounds are among the richest in the world. Nevertheless, they have been exploited in a very small way, and at present, the fishing industry makes only an insignificant contribution to the economy of the country. At present, both governmental and private interests are considering ways of putting new capital into the industry. Such schemes as have been broached

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will only come to fruition if new markets can be found overseas or within Ethiopia. Moreover, there is a certain antipathy between private fishing interests and government regulatory bodies which must be alleviated before any real changes can be made. This despatch contains such statistics and information as are available about the industry and its future prospects.

Legislation governing the fishing industry in Ethiopia

The fishing industry in Ethiopia is directed by the Fisheries Division of the Department of Marine, Ministry of Defense, and is a Federal (as opposed to Eritrean) function. In Massawa (the Assab fishery is not dealt with in this report) immediate control is exercised by the Sea Fishery Board. The governing legislation consists of the Maritime Code of 1960, Maritime Proclamation 137, and Maritime Order 12. The Consulate has not yet been able to obtain copies of these documents but will forward them as they become obtainble.

Ethiopia claims 12 miles of territorial waters. In the case of the Massawa fishery (defined as the continental coast of Ethiopia from Ras Kassar in the north to Thio in the south and the islands of Dahlak and Howaquil) the territorial waters include virtually the entire continental shelf, 12 miles being claimed around the Dahlak Archipelago. The continental shelf on the west shore of the Red Sea is said to be much wider than that on the east shore, giving Ethiopia a better sardine and anchovy fishery than Saudi Arabia and Yemen. In the past, many Yemeni fishermen operated out of Massawa, but the 1960 legislation required registration in Ethiopia of all fishermen operating in Ethiopian territorial waters, and therefore the number of Yemenis has been reduced, although there are still some who are registered in Ethiopia. Italian interests, believing that the Yemenis are better fishermen than the Ethiopians, and require smaller cash advances, would like to import Yemeni fishermen. This move has been resisted by the Ethiopians, who appear to have the authority to keep the Yemenis out. However, some Yemenis, particularly pearl divers and shell fishermen, may eventually be allowed in for training purposes.

A Fisheries Code, which will be essentially a codification of existing legislation, is now in preparation by the Israeli "master fisherman" who acts as adviser to the Sea Fishery Board in Massawa. Among other things, this code will attempt to state the exact application to the fishery of customs regulations, investment concessions, and the like. It will probably take considerable time to complete this code and bring it into effect. Meanwhile, the Sea Fishery Board considers that such matters as relief from tax for new investments, free importation of equipment, and similar concessions, are provided for by existing legislation and decrees regarding new investment.

The Sea Fishery Board has helped existing organizations to bring new equipment into the country duty free, according to its director, but he believes that a code providing for clear-cut application of inducements to invest will be of assistance in attracting capital into the industry.

Background and present organization of the fishing industry

Operating in what is thought to be one of the richest fishing grounds in the world, the Ethiopian fishing industry was very active during World War II and immediately following. The various companies operating in Massawa processed such products as salted fish, fish oil, canned tuna fish, fishmeal, dried shark fins, beche-de-mer (trepang), mother-of-pearl, trocas shells and turtles. These products were exported to Europe, North America, the Middle East and the Far East, while local industries manufactured button blanks and combs from shells.

Owing to wartime conditions, the local industries and fish processors were rather badly equipped with makeshift machinery, and their products were no longer competitive after the war, when previously established foreign competitors reentered the field. The only segments of the industry that managed to survive were fishmeal production, the fresh catch for the limited local market, and an Israeli company with Israeli personnel, established after the war, exporting chilled fish to Israel.

At present there are five distinct organizations in business in Massawa: the Israeli company ("Yotvat"); two Italian corporations ("S/A Mar Rosso" and "LIPMAR") buying fish for fishmeal; an Italian-owned corporation marketing fresh fish ("SAIPE"); and an independent Italian , Aristide Arietto ("SACIMAI"). who markets fresh fish with limited capital. Among these companies, only Yotvat can be described as a properly equipped commercial fishing concern, and even in this case, there is some doubt whether the company could operate at a profit if the transportation of the fish to Israel were not subsidized during peak periods by the Israeli Government. It is also understood that the price of Yotvat's fish in Israel is subsidized by the Government of Israel.

The Italian companies operate small locally-constructed fleets including small boats which pick up fish caught by local fishermen under contract.

The Eritreans engaged in fishing operate rather primitively, using locally made dhows and canoes ("hurries"). In catching anchovies and sardines for fishmeal, they use beach seines and fish at distances of less than 500 yards from shore. Their catch is beached and sun-dried, and then picked up by boats from the fishmeal companies. This catch is usually rather impure, having been dried on the beach, and must be cleaned by the fishmeal company before weighing. Fresh fish are caught by hook and line, while some indigenous fishermen specialize in diving for shells. Almost none of the Eritrean fishermen have motorized equipment, and in fact their equipment generally is inadequate.

Independent indigenous fishermen who bind themselves by contract to one or another of the local companies usually receive advances at the beginning of the season in the form of food or equipment. The Sea Fishery Board claims that the effective rate of interest on such loans is prohibitive and that they create a "company store" philosophy which has retarded the development of indigenous fishing units. On the other hand, buyers claim that many such

debts are unrecoverable. This problem is discussed further below.

From the above, it is evident that despite the claimed richness of its natural resources, the local industry is relatively insignificant and ill-equipped, and will require both private and governmental assistance to develop into a major branch of the economy. Some of the plans now afoot to help the industry are discussed below in the section on future prospects.

Commercial catch

The types of fish landed for fishmeal production are sardines and anchovies. For local consumption, the following types of fish are landed: groupper, sea bass, kingfish, queenfish, spanish mackerel, barracuda, gray mullet, sole, snapper of all kinds, scavenger, yellowfin tuna, small tuna, garfish, shrimp, crayfish, squid and octopus. The proportions are not known.

The fishing season for fresh fish runs from October to May for anchovies and sardines, and the year round for other types of fish, except tuna which are caught in April, May and June.

The last year for which statistics are available is 1953 Ethiopian calendar (September 11, 1960 to September 10, 1961). For convenience, this will be called 1961 in the tables which follow.

Table 1

Total landings - 1961

Product	Metric tons
Sardines and anchovies	9,800 1/
Fresh fish for local market	360
Fresh fish for export	1,020
Shells (all kinds)	130
Other marine products	30
Total	11,340

1/- Estimated, since fish are brought to Massawa sun-dried. The basis of the estimate is one ton dried equals four tons wet.

Table II

Utilization of catch - 1961

Product	Fresh catch Metric Tons	Finished product Metric Tons	Value US.$
Fishmeal and dried fish	9,800	2,440	$ 224,000
Fresh refrigerated fish	1,020	1,020	90,000
Fresh fish for local consumption	360	360	140,000
Shells (all kinds)	130	130	40,000
Other marine products	30	30	12,000

The following statistics covering the sardine and anchovy catch for the past three years were produced by the Sea Fishery Board:

	1959	1960	1961
Dhows (Ethiopians)	25	91	117
Dhows (Yemeni)	40	49	28
Dry fish and fishmeal production, metric tons	2,300	1,060	2,240

(The seasons referred to are from October to May of the year stated).

The season from October 1959 to May 1960 was rather bad, owing, in the words of the Sea Fishery Board, to "scarcity of fish". Whether less primitive methods of fishing would have improved the yield is a moot question. The Sea Fishery Board used these statistics to assert its case that the Yemeni fishermen are no more efficient than the Ethiopians. Also, these figures show how the number of Yemeni fishermen has declined over the past two years; in the season just past, there were no Yemeni dhows operating. The results of the present season, which ended in May 1962, are not yet known but one source states that production will not exceed 1,000 tons.

It appears that the Sea Fishery Board has been successful in limiting the number of Yemenis to be employed in the Ethiopian fishery and that in future only instructors and specialists will be imported. This does not sit well with the Italians, who still maintain that the Yemenis can be outfitted more cheaply and are more efficient than the Ethiopians.

Production of processed fishery products

Processing is limited to fishmeal, dried fish, and fresh refrigerated fish for export, and is shown in Table II above. The facilities for fishmeal

production are very primitive. Yotvat has a more modern fishmeal plant which is not in operation yet because of low prices, it is said. Yotvat's plant was originally intended for processing garbage, and was bought by a local Israeli meat-packing company, INCODE, who planned to set it up in Massawa for processing fish for fishmeal. However, INCODE has had some financial difficulties and never put the plant into operation, but instead sold it to Yotvat.

Consumption of fishery products

The limited statistics available suggest that per capita consumption of fish in Ethiopia is less than one kilogram per year, not considering the fish consumed in the subsistence economy along the coast, for which no statistics are available but which is probably considerable. As discussed below under future prospects, there is great scope for enlargement of the local market, and indeed this is a prerequisite for a thriving fishing industry.

Foreign trade of fishery products

Fishmeal and dried fish for fishmeal are exported to Ceylon, Europe (principally Italy) and the Middle East. Fresh refrigerated fish are exported to Israel. The destination of shells and other marine products is not known. No trade is done with the United States at present. The quantities exported are those shown in Table II above.

No complete statistics are available concerning the import trade, although we are informed that canned fish valued at about US.$ 80,000 per year is imported through Massawa from Spain, Japan, Norway and Yugoslavia.

Vessels and gear

The following vessels operate in the Massawa fishery, defined as the continental coast from Ras Kassar in the north to Thio in the south and including the islands of Dahlak and Howaquil.

Canoes ("hurries")	190 (however there hundreds of canoes not registered)
Dhows - not motorized	230
Dhows - motorized	3
Motorized fishing craft (30-300 HP)	20 (including carriers which pick up beached catches)

Of which:

Fishing craft manned by 1-2 crew	150
Fishing craft manned by 3-15 crew	154
Fishing craft manned by 16-30 crew	119

(These figures are approximate)

Except for Yotvat's vessels, which are only a few years old, the fishing fleet is rather old, having an average of about 20 years. Yotvat has six vessels, three of which are large trawlers with a displacement of about 160 tons and a refrigeration capacity of about 20 tons. In addition Yotvat has one medium-sized trawler with a refrigeration capacity of about 8 tons, another smaller trawler, and a small seiner.

Employment

There follow the current statistics on employment in the industry according to the Sea Fishery Board of Massawa.

Table III

Employment in the Massawa Fishery

Full-time fishermen	360
Part-time fishermen	2,500
Occasional fishermen	600
Total fishermen	3,460
Fishery industry laborers	150
Fish-dealers, owners, office workers, etc.	40
Total employment	3,650

Part-time fishermen are defined as those not spending all of the working time in fishing but whose living is made by fishing. They include pearl divers and shell fishermen.

Occasional fishermen are defined as those whose living is made mostly by work other than fishing.

The full-time fishermen above include about 13 Israelis and up to 70 Ethiopians on Yotvat vessels, the crews of the various trawlers and fish carriers, and between 50 and 100 hook and line fishermen.

According to the Sea Fishery Board, the indigenous fishermen are competent but lack proper gear and incentive because of the system of advances

and the low price paid to them for their catch. Italian fishing interests claim, however, that they are relatively unproductive and estimate each fisherman's average annual catch at one metric ton of dried fish.

Marketing and prices

Yotvat transports its catch to Israel in a chartered Israeli vessel with a refrigeration capacity of 600 metric tons. During the season, this vessel makes one trip to the port of Eilat in the Gulf of Aqaba every eight to ten days. Off season, such fish as are caught are transported to Israel by Yotvat's trawlers; during this time, refitting is also done. It is understood that the Israeli transport is subsidized by the Government of Israel. Prices are not known.

Fishmeal and dried fish producers export their product in gunny bags. They currently receive about US.$ 100 per metric ton for fishmeal in Italy. This price has prevailed for only a short time and has enabled the Sea Fishery Board to persuade buyers to raise their prices to indigenous fishermen, which now stand at an average of US.$ 50 per metric ton to contracted fishermen and US.$ 72 for uncontracted fishermen. (The difference of US.$ 22 per ton is considered by the Sea Fishery Board to be the effective rate of interest on advances; however, the buyers point out that the difference includes their cost of transporting the fish from the beach to their processing plants in addition to covering uncollectible advances.) During the 1960-61 season, the average price to local contracted fishermen for sardines and anchovies was US.$ 32 per metric ton. Anchovies currently fetch US.$ 56 per metric ton, while sardines fetch US.$ 44, hence the current average price of US.$ 50.

With regard to fresh fish for the local market, we are informed that the f.o.b. Massawa cost to the marketer is US.$ 0.12 to 0.14 per kilogram. The transport cost (by truck) to Addis Ababa is estimated at US.$ 0.08 per kilo. Current retail prices in Addis Ababa are US.$ 0.60 to $ 1.00 per kilo. Retail prices of shrimp and crayfish (locally called lobster) in Addis Ababa are US.$ 1.80 to $ 2.40 per kilo.

Retail prices of fresh fish in Asmara are US.$ 0.40 per kilo, while shrimp and crayfish sell in Asmara for US.$ 1.00 to 1.40 per kilo.

Indigenous fishermen under contract, who greatly outnumber independent fishermen, usually give part of their catch to uncontracted fishermen who then sell to producers at the higher price prevailing. This is/cause of great vexation to buyers, who claim that this maneuver, by extending the time of repayment of advances, further reduces their allegedly precarious profit. The buyers have not, however, unanimously agreed to buy fish at auction, and have so far not instituted a model contract prepared by the Sea Fishery Board, which would provide that the contractor may sell elsewhere if he may obtain a difference of more than US.$ 2.00 per metric ton. In fact, there are only two buyers of dried fish - S/A Mar Rosso and LIPMAR - and only Mar Rosso has refused to institute the above reforms, the other buyer being willing. The

Sea Fishery Board hopes that fish auctions may bring other buyers into the business, but there is little evidence that this might happen.

Schemes for breaking the vicious circle of low volume, low prices and low productivity are discussed below.

Future prospects for the fishing industry

The intense competition in the industry, the limited local market for fresh fish, the lack of local capital or desire to invest further capital, the relative backwardness of local fishermen (due principally to lack of capital and hence equipment and incentive), the rather primitive organization in the processing and marketing of fish in Massawa and generally in Ethiopia, and Ethiopia's inability to attract foreign capital, add up to a dismal outlook for the fishing industry. Nonetheless, some of the Ethiopian authorities seem to be aware of these problems, and are making efforts to build up the industry. While the future of the industry is decidedly uncertain, there are various approaches to its development which may yield results if followed through.

The Sea Fishery Board's approach calls for balanced growth of both governmental and private assistance. In the case of private assistance, it will be necessary to attract either local or foreign capital. Existing procedures for attracting capital investment by means of free importation of equipment, tax exemption for the first five years of operation, repatriation of profits, importation of technicians, and the like, are applicable to the fishing industry and in fact, the Sea Fishery Board claims to have helped to a small extent with customs problems in connection with equipment importation. Nonetheless, the Sea Fishery Board (if not its headquarters in Addis Ababa) will attempt to establish these procedures specifically for the fishery by means of a Fisheries Code, as noted earlier. Unfortunately in Asmara's despatches 65 of March 9, 1961, 74 of April 5, 1962, and 81 of the practical difficulties of negotiating the appropriate agreements, the increasing tendency of the Federal Government to regulate foreign exchange more closely, and the generally jittery business atmosphere at present, make it unlikely that this approach will have significant success in the foreseeable future. In addition, no success along these lines will come unless there is a great expansion of the market for fish in Ethiopia, or the development of profitable new export markets.

In the case of assistance to indigenous fishermen, the Sea Fishery Board's point of view is that low-cost and properly administered capital must be made available in order to eliminate the "company store" philosophy. Along with this capital, technical assistance and advice, a standard contract, and price regulation would, in the view of the Sea Fishery Board, result in a marked improvement in efficiency and incentive, and a reasonable standard of living for indigenous fishermen.

Logically, financial assistance would come from the Development Bank of

Ethiopia (DBE). The Sea Fishery Board at one time broached the idea of fishing cooperatives to the DBE, and the DBE has agreed that cooperatives would be a condition of DBE assistance, but that they could not be government-sponsored. Since the Sea Fishery Board is presently the only organization which could operate a cooperative, it will probably take some time before an organization can be created which can qualify for DBE assistance. Meanwhile, it is understood that one of the local companies, SAMPE, applied for a sizeable DBE loan several months ago but has heard nothing of the application, and now assumes that this capital will not be available. It appears that DBE does not consider such investments as development projects.

The standard contract produced by the Sea Fishery Board has been adopted by LIPMAR, one of the two companies buying sardines and anchovies. However, the other, S/A Mar Rosso, has so far refused to cooperate, and in fact has adopted a generally conservative position on expansion.

The Sea Fishery Board has had some success, as outlined earlier, in raising the prices paid for sardines and anchovies. Nonetheless, these prices still depend on overseas prices and on the extent of competition, which is limited.

In addition to the above schemes, the Sea Fishery Board has tried to institute a Mutual Assistance Fund financed by a levy of 10 per cent of the price of sardines and anchovies, the contribution to be divided equally between buyer and seller. This scheme fell through because S/A Mar Rosso declined to enter the fund. (Conceivably, this fund could have eliminated the advance system.) According to its most recent financial statement, S/A Mar Rosso has US.$ 66,000 (almost half of its active capital) tied up in advances, which the company would presumably want to recover before changing the system. In any case, the Mutual Assistance Fund is presently a dead issue, although it may possibly revived in future.

Finally, the possibilities of the Ethiopian market are hardly touched, which is probably due largely to lack of competition. Per capita consumption is extremely low, in a country where the large Coptic (Christian) population observes more than a hundred fast days per year during which they may eat fish. It is obvious that there is room for a vast enlargement of this market, but this would require some change in eating habits and a considerable reduction in the price of fish, which is presently something of a luxury item for most Ethiopians. Such price reduction should not be too difficult.

Possibilities for local processing industries include canning tuna fish, sardines, and fish directed specifically at the African market, making fish flour out of the high-quality anchovies caught locally, and exporting larger quantities of such high-quality fish as snapper, shrimp and crayfish. (There is, however, some doubt that tuna fish is available in commercial quantities.) Additional profits might also be obtained from selling dried shark directly to the Hong Kong market; this product is presently marketed through Aden.

A survey of the fishery to be conducted by West Germany under a technical

assistance agreement with Ethiopia will be undertaken shortly, and this could be of considerable benefit in identifying the possibilities and bringing them to the attention of private and government interests who might do something about them. In addition, the Italian Consulate in Massawa has been gathering information for an Italian company said to be interested in going into business here.

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